Remarks

Claims 1, 3, 5, 6, 9 and 14 stand rejected under 35 USC 102(b) as being anticipated by '513 to Van Arsdale. Claims 1, 2, 3, 5, 6, 9, 10, 11 and 14 stand rejected under 35 USC 103(a) as being unpatentable over '610 due to Raffer in view '513 due to Van Arsdale. Claims 1, 2, 3, 5, 6 through 9 and 14 stand rejected under 35 USC 103(a) as being unpatentable over '196 to Parshall in view of TE Technologies, '437 due to Constant as well as '513 to Van Arsdale. Claims 10 through 12 stand rejected under 35 USC 103(a) as being unpatentable over Parshall, TETech and Van Arsdole as applied previously to claim 1 and in further view of '610 due to Raffer. Claim 15 stands rejected under 35 USC 103(a) as being unpatentable over Van Arsdale in view of TA Instruments.

The Examiner has, however, indicated that claims 4, 13 and 16 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In responding to these rejections, the Applicant has amended claim 1 to specifically recite that the support part which carries the sample is heated by directly applying an electric voltage thereto. Moreover, the limitations of former claim 7 have been incorporated in claim 1 and claim 5 has been clarified. The Applicant respectfully submits that amended claim 1 is distinguish from the prior art of record for the following reasons.

With regard to Van Arsdale, the Examiner states that the lower measuring part is a temperature controlled plate which is heated by the application of

a voltage. The Applicant respectfully disagrees. The voltages applied to the Van Arsdale apparatus are applied to the upper plate 7 to cause oscillation thereof. The lower plate 1 seats on a support member 2 which can be raised by an air supplied control 5. After having been positioned, plate 1 subsequently remains stationary during the measurements while member 7 oscillates. In fact, Van Arsdale is completely silent on the manner in which plate 1 is temperature controlled. No electric leads or any other cooling means are shown by Van Arsdale or described thereby. Since plate 1 is essentially stationary after initial positioning, its temperature could be controlled through the feeding of pipes containing a cooling or heating liquid passing through the lower plate 1. Alternatively, plate 1 could be temperature controlled through the application of heating elements, such as thermo-electric elements, to the periphery of the plate. Van Arsdale provides no disclosure for the recited limitation of claim 1, that the support part which carries the sample is heated by directly applying electric voltage thereto. This limitation of amended claim 1 is simply absent from the Van Arsdale disclosure, since Van Arsdale provides no disclosure whatsoever for the manner in which the temperature controlled plate 1 is, in fact, temperature controlled. For this reason, claim 1 cannot be considered to be anticipated by the Van Arsdale reference.

Nor does the Raffer reference provide motivation for the limitations of amended claim 1. The Examiner points out that Raffer discloses a lower measuring part which is heated by a heating element and that it is well established that the elimination of an element and its function is an obvious modification if the function of the element is not desired. The Examiner argues that the elimination of the lower plate (reference item 5)

of Raffer would allow for direct heating of the sample by placing the sample directly on the heating element.

The Applicant respectfully disagrees, since the function of the lower element plate is, in fact, desired. The lower plate of Raffer allows the sample to be substantially larger than the thermal electric element permitting use of smaller, less expensive thermal elements. By elimiting the plate of Raffer and having the sample placed directly on the thermal electric element, the sample would be limited to the size of the thermal electric element. Moreover, the lower plate 5 has a certain heat capacity which provides an integrating effect on the temperature to smooth out temperature fluctuations caused by the thermal electric element. In addition, direct placement of the sample on the thermal electric plate would only allow temperature control through control of the electrical power applied to the thermal electric element. Through an interposition of the lower plate 5, a further temperature control possibility is introduced, since the thermal electric element can be cycled (switched on and off) to maintain a desired temperature in the temperature control plate. Therefore, the lower plate provides for a more stable, less expensive, and more reliable temperature control. Seen in this manner, the Raffer reference provides no motivation for elimination of the lower plate. On the contrary, the function of the lower plate 5 is desired and would result in substantial disadvantages if removed.

With reference to former claim 7, whose limitations are now incorporated in amended claim 1, the Examiner argues that removal of the lower plate measuring element of Parshall and replacing it with a thermal electric element with a central hole as shown by TETech would still allow the

sample to be heated and the temperature of the sample monitored. The Examiner repeats his argument that the Van Arsdale reference teaches a rheometer with direct heating of the sample using a thermal electric element. With regard to the statements concerning Van Arsdale, the Examiner is referred to the comments made above with regard to the anticipation rejection, since Van Arsdale does not disclose direct heating of the lower plate by application of a voltage thereto. Moreover, simple removal of the lower plate measuring element of Parshall and replacing it with a central hole thermal electric element of TETech would not lead to a functioning apparatus, since the sample would fall through the center hole in the thermal electric element. A direct, functioning combination of the disclosures of Parshall and TeTech would simply lead to a thermal electric element having a central hole which is placed in thermal contact with the lower plate of Parshall to allow viewing of the sample through the lens and through the center hole. Elimination of the lower plate measuring element of Parshall would require placement of the central lens within the center hole of the thermal electric element and would have the disadvantages associated with similar changes discussed above with regard to the Raffer reference, since the integrating function of the lower plate of Parshall would be lost and a substantially larger heating element would be required. Moreover, a temperature differential would certainly obtain between the lens and the center hole rim of the thermal electric element causing expansion and contraction effects which could result in problems regarding sealing of the lens with respect to the central hole in order to prevent sample fluid from falling in a downward direction away from the measuring region and towards the observation camera.

For the reasons mentioned above, the Applicant believes that claim 1 is sufficiently distinguished from the prior art of record to satisfy the requirements for patenting in the United States, since the direct application of a voltage to the support plate in combination with the support plate being at least partially transparent disclose elements which are neither taught nor suggested by any of the prior art of record. The remaining dependent claims of record inherit the limitations of amended claim 1 and are therefore similarly distinguished from the prior art of record for the reasons given. Reconsideration and passage to issuance is therefore respectfully requested.

No new matter has been added in this amendment.

Respectfully submitted,

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